

## SEQUENCE LISTING

<110> KYOWA HAKKO KOGYO CO., LTD.

<120> NOVEL PEPTIDE

<130> H10-0981N2

<150> JP 98/213823

<151> 1998-07-29

<160> 34 ✓

<170> PatentIn Ver. 2.0

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<211> 359

<212> PRT

<213> Mouse

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Thr Asn Ser Trp Val Phe Ser Pro Met Glu Ser Ala Ser Ser Val Leu  
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Lys Met Lys Asn Phe Phe Ser Thr Lys Thr Asp Tyr Phe Asn Glu Thr  
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Thr Ile Leu Val Trp Val Trp Pro Phe Gly Gln Thr Phe Asp Leu Thr  
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Ser Cys Gln Ala Met Phe Asn Ile Gln Gly Cys His Leu Thr Thr Asp  
85 90 95

Arg Ser Leu Tyr Asn Lys Ser His Ala Val Leu Ile His His Arg Asp  
100 105 110

Ile Ser Trp Asp Leu Thr Asn Leu Pro Gln Gln Ala Arg Pro Pro Phe  
115 120 125

Gln Lys Trp Ile Trp Met Asn Leu Glu Ser Pro Thr His Thr Pro Gln  
130 135 140

Lys Ser Gly Ile Glu His Leu Phe Asn Leu Thr Leu Thr Tyr Arg Arg  
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Asp Ser Asp Ile Gln Val Pro Tyr Gly Phe Leu Thr Val Ser Thr Asn

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Pro Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val

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Val Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu

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Leu Ser Lys Ser Ile Glu Ile His Thr Tyr Gly Gln Ala Phe Gly Glu

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Tyr Val Asn Asp Lys Asn Leu Ile Pro Thr Ile Ser Thr Cys Lys Phe

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Tyr Leu Ser Phe Glu Asn Ser Ile His Lys Asp Tyr Ile Thr Glu Lys

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Leu Tyr Asn Ala Phe Leu Ala Gly Ser Val Pro Val Val Leu Gly Pro

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Ser Arg Glu Asn Tyr Glu Asn Tyr Ile Pro Ala Asp Ser Phe Ile His

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Val Glu Asp Phe Asn Ser Pro Ser Glu Leu Ala Lys Tyr Leu Lys Glu

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Val Asp Lys Asn Asn Lys Leu Tyr Leu Ser Tyr Phe Asn Trp Arg Lys

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Asp Phe Thr Val Asn Leu Pro Arg Phe Trp Glu Ser His Ala Cys Leu

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Thr Asn Ser Trp Ile Phe Ser Pro Met Glu Ser Ala Ser Ser Val Leu

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Lys Met Lys Asn Phe Phe Ser Thr Lys Thr Asp Tyr Phe Asn Glu Thr

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Thr Ile Leu Val Trp Val Trp Pro Phe Gly Gln Thr Phe Asp Leu Thr

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Ser Cys Gln Ala Met Phe Asn Ile Gln Gly Cys His Leu Thr Thr Asp

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Ile Ser Trp Asp Leu Thr Asn Leu Pro Gln Gln Ala Arg Pro Pro Phe

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Gln Lys Trp Ile Trp Met Asn Leu Glu Ser Pro Thr His Thr Pro Gln

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Lys Ser Gly Ile Glu His Leu Phe Asn Leu Thr Leu Thr Tyr Arg Arg

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Asp Ser Asp Ile Gln Val Pro Tyr Gly Phe Leu Thr Val Ser Thr Asn

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Pro Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val

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Val Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu

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Leu Ser Lys Ser Ile Glu Ile His Thr Tyr Gly Gln Ala Phe Gly Glu

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Tyr Val Asn Asp Lys Asn Leu Ile Pro Thr Ile Ser Ala Cys Lys Phe

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230

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Tyr Leu Ser Phe Glu Asn Ser Ile His Lys Asp Tyr Ile Thr Glu Lys

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255

Leu Tyr Asn Ala Phe Leu Ala Gly Ser Val Pro Val Val Leu Gly Pro

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265

270

Ser Arg Glu Asn Tyr Glu Asn Tyr Ile Pro Ala Asp Ser Phe Ile His

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Val Glu Asp Tyr Asn Ser Pro Ser Glu Leu Ala Lys Tyr Leu Lys Glu

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295

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Val Asp Lys Asn Asn Lys Leu Tyr Leu Ser Tyr Phe Asn Trp Arg Lys  
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Asp Phe Thr Val Asn Leu Pro Arg Phe Trp Glu Ser His Ala Cys Leu  
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Met

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Thr Ser Thr Ser Lys Gly Ile Leu Arg Pro Phe Leu Ile Val Cys Ile

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aac agc tgg gtc ttc agt cca atg gag tct gca agt tct gtg ctg aaa 261

Asn Ser Trp Val Phe Ser Pro Met Glu Ser Ala Ser Ser Val Leu Lys

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atg aaa aat ttc ttc tcc aca aaa act gat tat ttt aac gaa act acc 309

Met Lys Asn Phe Phe Ser Thr Lys Thr Asp Tyr Phe Asn Glu Thr Thr

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Cys Gln Ala Met Phe Asn Ile Gln Gly Cys His Leu Thr Thr Asp Arg

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tca ttg tac aac aaa tcc cat gcg gtc ctg att cac cat aga gac atc 453

Ser Leu Tyr Asn Lys Ser His Ala Val Leu Ile His His Arg Asp Ile

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Ser Trp Asp Leu Thr Asn Leu Pro Gln Gln Ala Arg Pro Pro Phe Gln

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aaa tgg att tgg atg aat tta gag tca ccc act cac acc ccc caa aag 549

Lys Trp Ile Trp Met Asn Leu Glu Ser Pro Thr His Thr Pro Gln Lys

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Ser Asp Ile Gln Val Pro Tyr Gly Phe Leu Thr Val Ser Thr Asn Pro

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Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val Val

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Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu Leu

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Val Asn Asp Lys Asn Leu Ile Pro Thr Ile Ser Thr Cys Lys Phe Tyr

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Leu Ser Phe Glu Asn Ser Ile His Lys Asp Tyr Ile Thr Glu Lys Leu

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tac aat gca ttt ttg gct ggt tca gta cct gtt gtc ctg ggt cca tct 933

Tyr Asn Ala Phe Leu Ala Gly Ser Val Pro Val Val Leu Gly Pro Ser

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gaa gat ttt aac tct ccc agt gag tta gca aaa tat ctg aag gaa gtt 1029

Glu Asp Phe Asn Ser Pro Ser Glu Leu Ala Lys Tyr Leu Lys Glu Val

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gac aaa aac aat aag ttg tac ctt agt tac ttt aac tgg aga aag gat 1077

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Phe Thr Val Asn Leu Pro Arg Phe Trp Glu Ser His Ala Cys Leu Ala  
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Cys Asp His Val Lys Arg His Gln Glu Tyr Lys Ser Val Gly Asn Leu  
340 345 350

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Glu Lys Trp Phe Trp Asn  
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accgtgaga attttatcaa taaacagttt ttgcaaatat atttttgtgt tcatagccat 300

aaagaggcat gaatgccgaa gagaaaaaaa ctgaaaaca cttttttctt taaaaaaaaa 360

gccttcactc atcttttttag ccacaatctg ctaaaattca tgacatcaaa gttgttcttc 420

atgaaatata gccctttttt gagaatttgt ttatttttat aataccgata tcatcttaat 480

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Met Thr Ser Thr Ser Lys Gly Ile

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Leu Arg Pro Phe Leu Ile Val Cys Ile Ile Leu Gly Cys Phe Met Ala

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Cys Leu Leu Ile Tyr Ile Lys Pro Thr Asn Ser Trp Ile Phe Ser Pro

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Lys Thr Asp Tyr Phe Asn Glu Thr Thr Ile Leu Val Trp Val Trp Pro  
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ttt ggg cag acc ttt gac ctt aca tcc tgc caa gca atg ttc aac atc 1552

Phe Gly Gln Thr Phe Asp Leu Thr Ser Cys Gln Ala Met Phe Asn Ile  
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caa gga tgc cat ctc aca acg gac cgt tca ctg tac aac aaa tcc cat 1600

Gln Gly Cys His Leu Thr Thr Asp Arg Ser Leu Tyr Asn Lys Ser His  
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gca gtt ctg atc cat cac cga gac atc agt tgg gat ctg aca aat tta 1648

Ala Val Leu Ile His His Arg Asp Ile Ser Trp Asp Leu Thr Asn Leu  
105 110 115 120

cct cag caa gct agg cca ccc ttc cag aaa tgg att tgg atg aat ttg 1696

Pro Gln Gln Ala Arg Pro Pro Phe Gln Lys Trp Ile Trp Met Asn Leu  
125 130 135

gaa tca cca act cac act ccc caa aag agt ggc att gag cac ttg ttt 1744

Glu Ser Pro Thr His Thr Pro Gln Lys Ser Gly Ile Glu His Leu Phe  
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aac ctg act ctg act tac cgc cgt gat tca gat atc caa gtg cct tat 1792

Asn Leu Thr Leu Thr Tyr Arg Arg Asp Ser Asp Ile Gln Val Pro Tyr  
155 160 165

ggc ttc ttg acg gta agc aca aat ccc ttc gtg ttt gaa gtg cca agc 1840

Gly Phe Leu Thr Val Ser Thr Asn Pro Phe Val Phe Glu Val Pro Ser  
170 175 180

aaa gag aaa ttg gtg tgc tgg gtt gtg agt aac tgg aac cct gag cat 1888

Lys Glu Lys Leu Val Cys Trp Val Val Ser Asn Trp Asn Pro Glu His  
185 190 195 200

gcc aga gtc aag tat tac aat gag cta agc aaa agc att gaa atc cat 1936

Ala Arg Val Lys Tyr Tyr Asn Glu Leu Ser Lys Ser Ile Glu Ile His  
205 210 215

acc tac ggg caa gca ttt gga gaa tat gtc aat gat aaa aat ttg att 1984

Thr Tyr Gly Gln Ala Phe Gly Glu Tyr Val Asn Asp Lys Asn Leu Ile

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cct acc ata tct gct tgt aaa ttt tat ctt tcc ttt gaa aat tca atc 2032

Pro Thr Ile Ser Ala Cys Lys Phe Tyr Leu Ser Phe Glu Asn Ser Ile

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cac aag gat tac atc acg gaa aag cta tac aat gct ttt ctg gct ggc 2080

His Lys Asp Tyr Ile Thr Glu Lys Leu Tyr Asn Ala Phe Leu Ala Gly

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tct gta cct gtt gtt ctg gga cca tct agg gaa aac tat gag aat tat 2128

Ser Val Pro Val Val Leu Gly Pro Ser Arg Glu Asn Tyr Glu Asn Tyr

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att cca gca gat tca ttc att cat gtg gaa gat tat aac tct ccc agt 2176

Ile Pro Ala Asp Ser Phe Ile His Val Glu Asp Tyr Asn Ser Pro Ser

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gag cta gca aag tat ctg aag gaa gtc gac aaa aac aat aag tta tac 2224

Glu Leu Ala Lys Tyr Leu Lys Glu Val Asp Lys Asn Asn Lys Leu Tyr

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ctt agt tac ttt aac tgg agg aag gat ttc act gta aat ctt cca cga 2272

Leu Ser Tyr Phe Asn Trp Arg Lys Asp Phe Thr Val Asn Leu Pro Arg

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ttt tgg gaa tca cat gca tgt ttg gct tgc gat cat gtg aaa agg cat 2320

Phe Trp Glu Ser His Ala Cys Leu Ala Cys Asp His Val Lys Arg His

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caa gaa tat aag tct gtt ggt aat tta gag aaa tgg ttt tgg aat 2365

Gln Glu Tyr Lys Ser Val Gly Asn Leu Glu Lys Trp Phe Trp Asn

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cgccgcctgg ccctgcctgc ctctgcgcc gcgcagccct cgcgagcgcc ccgatggcg 180

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agtataacaa ctgtctacgt gcttcccatg atatgttctc tatattgaaa aatt atg 297

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Thr Ser Thr Ser Lys Gly Ile Leu Arg Pro Phe Leu Ile Val Cys Ile

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atc ctg ggc tgt ttc atg gca tgt ctt ctc att tac atc aaa cct acc 393

Ile Leu Gly Cys Phe Met Ala Cys Leu Leu Ile Tyr Ile Lys Pro Thr

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aac agc tgg atc ttc agt cca atg gaa tca gcc agc tct gtg ctg aaa 441

Asn Ser Trp Ile Phe Ser Pro Met Glu Ser Ala Ser Ser Val Leu Lys

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atg aaa aac ttc ttt tcc acc aaa act gat tat ttt aat gaa act act 489

Met Lys Asn Phe Phe Ser Thr Lys Thr Asp Tyr Phe Asn Glu Thr Thr

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att ctg gtg tgg gtg tgg cca ttt ggg cag acc ttt gac ctt aca tcc 537

Ile Leu Val Trp Val Trp Pro Phe Gly Gln Thr Phe Asp Leu Thr Ser

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tgc caa gca atg ttc aac atc caa gga tgc cat ctc aca acg gac cgt 585

Cys Gln Ala Met Phe Asn Ile Gln Gly Cys His Leu Thr Thr Asp Arg

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tca ctg tac aac aaa tcc cat gca gtt ctg atc cat cac cga gac atc 633

Ser Leu Tyr Asn Lys Ser His Ala Val Leu Ile His His Arg Asp Ile

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aaa tgg att tgg atg aat ttg gaa tca cca act cac act ccc caa aag 729

Lys Trp Ile Trp Met Asn Leu Glu Ser Pro Thr His Thr Pro Gln Lys  
130 135 140 145

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Ser Gly Ile Glu His Leu Phe Asn Leu Thr Leu Thr Tyr Arg Arg Asp  
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tca gat atc caa gtg cct tat ggc ttc ttg acg gta agc aca aat ccc 825

Ser Asp Ile Gln Val Pro Tyr Gly Phe Leu Thr Val Ser Thr Asn Pro  
165 170 175

ttc gtg ttt gaa gtg cca agc aaa gag aaa ttg gtg tgc tgg gtt gtg 873

Phe Val Phe Glu Val Pro Ser Lys Glu Lys Leu Val Cys Trp Val Val  
180 185 190

agt aac tgg aac cct gag cat gcc aga gtc aag tat tac aat gag cta 921

Ser Asn Trp Asn Pro Glu His Ala Arg Val Lys Tyr Tyr Asn Glu Leu

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agc aaa agc att gaa atc cat acc tac ggg caa gca ttt gga gaa tat 969

Ser Lys Ser Ile Glu Ile His Thr Tyr Gly Gln Ala Phe Gly Glu Tyr

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gtc aat gat aaa aat ttg att cct acc ata tct gct tgt aaa ttt tat 1017

Val Asn Asp Lys Asn Leu Ile Pro Thr Ile Ser Ala Cys Lys Phe Tyr

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ctt tcc ttt gaa aat tca atc cac aag gat tac atc acg gaa aag cta 1065

Leu Ser Phe Glu Asn Ser Ile His Lys Asp Tyr Ile Thr Glu Lys Leu

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tac aat gct ttt ctg gct ggc tct gta cct gtt gtt ctg gga cca tct 1113

Tyr Asn Ala Phe Leu Ala Gly Ser Val Pro Val Val Leu Gly Pro Ser

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agg gaa aac tat gag aat tat att cca gca gat tca ttc att cat gtg 1161

Arg Glu Asn Tyr Glu Asn Tyr Ile Pro Ala Asp Ser Phe Ile His Val

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gaa gat tat aac tct ccc agt gag cta gca aag tat ctg aag gaa gtc 1209

Glu Asp Tyr Asn Ser Pro Ser Glu Leu Ala Lys Tyr Leu Lys Glu Val

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Asp Lys Asn Asn Lys Leu Tyr Leu Ser Tyr Phe Asn Trp Arg Lys Asp

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Phe Thr Val Asn Leu Pro Arg Phe Trp Glu Ser His Ala Cys Leu Ala

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Cys Asp His Val Lys Arg His Gln Glu Tyr Lys Ser Val Gly Asn Leu

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Glu Lys Trp Phe Trp Asn

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caatgtttaa ttatgtatca atttaagatt tttttctgaa gccctaatat ttaaaatggc 2301

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caatgcacat ttgttgatg aataaataaa tgcaattgaa ttcccagaaa aatgattgtt 2541

tcaaggaagt gacagttcta ctttagaagt actaattgga gatgactttt atatccatt 2601

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taaacctacc attac 2676

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<223> Description of Artificial Sequence: synthetic DNA

<400> 6

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11

<210> 7

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<212> DNA

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<220>

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<400> 7

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8

<210> 8

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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 8

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32

<210> 9

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 9

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33

<210> 10

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

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31

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 11

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32

<210> 12

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 12

cagctgggat ctgactaact tacc

24

<210> 13

<211> 25

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 13

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25

<210> 14

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 14

gatatcgctg cgctggctgt cgac

24

<210> 15

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 15

caagaaggaa ggctggaaaa gagc

24

<210> 16

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

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24

<210> 17

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: synthetic DNA

<400> 17

tgcttggcca taggtgtgga tttc

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<210> 18

<211> 24

<212> DNA

<213> Artificial Sequence

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<400> 18

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24

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 19

tgcttggcca taggtgtgga tttc

24

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

<400> 20

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24

<210> 21

<211> 24

<212> DNA

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<223> Description of Artificial Sequence: synthetic DNA

<400> 21

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24

<210> 22

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<223> Description of Artificial Sequence: synthetic DNA

<400> 22

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20

<210> 23

<211> 20

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<223> Description of Artificial Sequence: synthetic DNA

<400> 23

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<210> 24

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<223> Description of Artificial Sequence: synthetic DNA

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32

<210> 25

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic DNA

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32

<210> 26

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 26

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25

<210> 27

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 27

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25

<210> 28

<211> 891

<212> DNA

<213> Mouse

<400> 28

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<211> 87

<212> DNA

<213> Mouse

<400> 29

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tgctttccat gctatgttct ctacact 87

<210> 30

<211> 2036

<212> DNA

<213> Mouse

<400> 30

gaaaaattat gacatcaaca tccaaaggca ttcttgcgcc atttctaata gtctgcatca 60

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tcagtccaat ggagtctgca agttctgtgc tgaaaatgaa aaatttcttc tccacaaaaa 180

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attataccat ttatagaacg ctagttaactt cattcatttg aaatatTTTT tccaaagcat 1980

ccatatttaa gttttatttt actgtatttg ttaataaata gaagtaaaac ttgaaa 2036

<210> 31

<211> 2056

<212> DNA

<213> Mouse

<400> 31

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tccatgacca ctttgtgtct tcaaattccag taccatctca aactagaggc aagaggcaga 180

gagcacacta tagatggtag aagatttttt taaaacctca tgcccaccct tactaacatg 240

cctcatctaa caaggtcata ttccttaatt ctccccta atgttgcaacc actggcaccc 300

aacaaaattt attagcctaa ggaggttcct ctactttaa ctactacact tataaaaaca 360

caatcaaagg atatgaaatt gaggtgggga tagggttaga ttatggaagg atttaggagg 420

tagggggtaa tatacatata tgtataaagc ccaaragtct caactatatg arrattatat 480

aatcactaca ttaaagtcgg ggatayccta atcatatatg aggaaatttg tttttgttg 540

ttattttatt tatttacatt taaaatgtaa atctgccc atgtattccct ctccccttg 600

tctggaagtt tgtactttat taattctcag taaccacaat taattaaaca gttactgcca 660

tttgcaaact tcatgattca tctctgagta agagtgtga gtgggatatt atgcttcac 720



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acaacatgtg ccccttctac cacatttacc acaaaccctt ccccaaaaaa ctacatcgta	1980
gagaatttgg gtccacagac aactctgccc ctctattttt agtttaattt taatcacccc	2040
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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 32

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<210> 33

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 33

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22

<210> 34

<211> 24

<212> DNA

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<220>

<223> Description of Artificial Sequence: synthetic DNA

<400> 34

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24